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Central Intelligence Agency



Washington, D. C. 20505

21 JUN 1985

MEMORANDUM FOR: See Distribution**SUBJECT:** Southwest Reactor Engineering and Research
Design Center [redacted]

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The attached memorandum addresses the function of the Southwest Reactor Engineering and Research Design Center, Chengdu, China. It is intended to support your consideration of applications to export equipment of this end-user. [redacted]

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[redacted]
Director
Scientific and Weapons Research

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Attachment:
as stated

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SUBJECT: Southwest Reactor Engineering and Research Design Center [REDACTED]

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OSWR/NED/MTB/[REDACTED] 24 June 1985

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Washington, D.C. 20505

DIRECTORATE OF INTELLIGENCE

11 June 1985

SOUTHWEST REACTOR ENGINEERING AND RESEARCH DESIGN CENTER [REDACTED]

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Summary

The main focus of The Southwest Reactor Engineering and Research Design Center, (SWERC) currently appears to be research relating to civilian nuclear power, although research and development related to naval propulsion has been done there and may be continuing. [REDACTED]

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The Southwest Reactor Engineering and Research Design Center (SWERC) is located near Chengdu, Sichuan Province, China. Construction of the center began in 1966 and it is under the administration of the Ministry of Nuclear Industry. The principal research facility at the center is currently a 125 MW High Flux Test Reactor, which was completed in 1979 and began operation in the 1980-81 time period. About 3000 people work at SWERC, of whom about 1400 are engineers. SWERC has six Institutes: the Nuclear Reactor Operation Institute, the Nuclear Reactor Experiment Institute, the Nuclear Materials Institute, the FBR Institute, the PWR Design Institute, and the Experimental Plant. [REDACTED]

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SWERC is China's principal nuclear energy research institute. Its 125 MW High Flux Test Reactor, which has a beryllium reflector and uses 90 percent enriched uranium fuel, is producing isotopes for both industrial and medical purposes. The center is conducting research in pressurized water reactor technology, fast breeder reactor technology, sodium technology for fast breeder reactors, and the nuclear fuel cycle including uranium ore recovery, fuel

This memorandum was prepared at the request of [REDACTED] Carlton Stoiber, Chairman of the Subgroup on Nuclear Export Coordination, room 7820, Department of State, and Albert Solga, Chairman of The Operating Committee, room 2093, Department of Commerce. It was prepared by [REDACTED] Nuclear Energy Division, Office of Scientific and Weapons Research. Comments and queries may be directed to Chief, Nuclear Energy Division, OSWR, [REDACTED]

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element design and fabrication, and spent fuel reprocessing. One of its major programs is the technical design for the nuclear reactor for a nuclear heat and power station to be located at the Shanghai Petrochemical Works. [REDACTED]

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The Chinese have discussed several research programs at SWERC which appear to be naval propulsion related. Specifically, their research on fuel pellet-cladding interactions and pressure vessel embrittlement appear aimed at solving existing problems in pressurized water reactors. Since the only reactors of this type the Chinese have are in their submarines, we believe there is either a group dedicated to solving naval propulsion problems, or the military uses the expertise and facilities at SWERC to solve existing/projected problems in their naval nuclear reactors. [REDACTED]

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The Center almost certainly had to be conceived to support military research. However as the center evolved, China embarked on an indigenous nuclear power program [REDACTED] and was actively negotiating to purchase a nuclear power plant from the West. The Cultural Revolution and its aftermath significantly slowed Chinese nuclear power plans. In the late 70's China again began to discuss their civil nuclear power program. Concurrently, China completed the 125 MW reactor at SWERC and with the initial operation of this reactor opened the facility to a large number of western visitors including the U. S. Science Attache, as well as scientists and researchers from the U. S., Japan, France and Italy. Visitors are usually escorted to the 125 MW reactor and sometimes to the hot cells. None of the visitors reported a military presence except for several guards, but we cannot rule out a group dedicated to support military research. [REDACTED]

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